

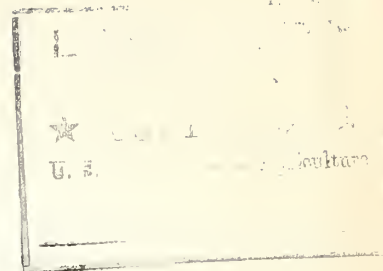
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Sept. '32

UNITED STATES DEPARTMENT OF AGRICULTURE  
WASHINGTON, D. C.



O R D E R

DESIGNATING PUBLIC SHOOTING GROUNDS WITHIN THE  
BEAR RIVER MIGRATORY BIRD REFUGE

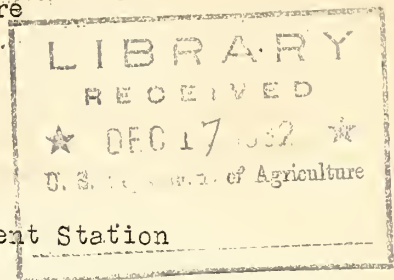
The provisions of Regulation 3 of the Regulations effective October 1, 1932, governing the administration of the Bear River Migratory Bird Refuge, Utah, having been complied with, I, R. W. Dunlap, Acting Secretary of Agriculture, do hereby set aside and designate until further notice as public shooting areas all of Unit No. 1 within the dikes south of contour line 4205, except fractional section 26, Township 9 North, Range 4 West, which is reserved for administrative purposes; all of Unit No. 2, except fractional section 35, Township 9 North, Range 4 West, lying west of the division dike forming the east boundary of Unit 2, which is reserved for administrative purposes; and that portion of the Refuge outside the dikes lying south of Unit No. 5, the west boundary of such area to be a continuation of a line drawn from the intersection of the division dike between Units 4 and 5 where said division dike joins the main outer dike, and extending south to the east and west exterior boundary of the said Refuge, for the public hunting of migratory waterfowl (except Ross's goose, cackling goose, wood duck, ruddy duck, bufflehead duck, and swans), coots, and Wilson's snipe or jacksnipe, in accordance with the provisions of said regulations. This order shall be effective from and after October 1, 1932.

  
Acting Secretary.

Issued:

September 28, 1932.





PARASITES OF MINKS AND THEIR CONTROL

By KARL B. HANSON, Director, Fur Animal Experiment Station  
Division of Fur Resources

Findings and observations have shown that minks are susceptible to various kinds of parasites and that their parasitic diseases are of considerable economic and scientific importance. Investigations of these parasites, and of their prevalence, pathogenicity, treatment, and control, have not yet been sufficiently thorough and extensive to make generally available the specific information necessary for the most successful operation of mink farms. The following preliminary information, however, has been prepared to supplement correspondence with fur farmers and others who are studying the parasites of fur animals.

EXTERNAL PARASITES

Fleas

Minks are subject to fleas, one species encountered being Ceratophyllus vison. Fleas are a source of considerable annoyance and tend to lower the vitality of the host when present in large numbers. Moreover, it is possible that further investigational work will demonstrate that they may act as carriers of some of the minks' diseases and parasites.

In the treatment and control of flea infestation, destruction of the immature forms--that is, the eggs, larvae, and pupae--which usually are present in the dirt in cracks and corners of nest boxes and houses, is just as important as the destruction of the adult fleas on the host animal. Control measures should comprise simultaneous destruction of both. Keeping houses and nest boxes clean and disinfecting them at regular intervals are essential.

To destroy the eggs, larvae, and pupae, (1) remove all litter and debris from the nest boxes, houses, and pens, and safely dispose of it, preferably by burning; (2) thoroughly clean and scrub the nest boxes and houses; and (3) spray them with a hot 3 to 5 per cent solution of a coal-tar disinfectant, or flame them thoroughly with a blow torch. The torch should be used only while the wood is still wet, and the flame should merely dry the lumber.

To destroy the adult fleas, dust the minks with either fresh finely ground pyrethrum or a mixture of 1 part powdered derris root and 2 parts of some carrier, such as cornstarch, flour, or talc. If pyrethrum is used, it is essential that this product be fresh; otherwise, it will not be effective.

Lice

A biting louse, Trichodectes retusus, has been found to infest minks. This is probably the one reported as common on some mink farms in Alaska. Lice are a source of considerable annoyance. For treatment of minks for the removal



of biting lice, the animals should be dusted with either a powder containing tobacco dust or a mixture of 1 part powdered derris root and 2 parts of some carrier, such as cornstarch. Repeat the treatment two or three times at intervals of two weeks, so as to destroy the young lice, which hatch from the nits.

*Scabies, Furunculosis*  
Mange

Although there apparently are no published reports of mange as a disease of minks, F. G. Wallace, of the Division of Economic Entomology and Zoology of the University of Minnesota, has informed the writer that in studies of parasites of minks he has encountered some cases of this disease on a mink ranch. In these cases the mite was different from those usually encountered in mange in domestic mammals.

Experience with other kinds of fur bearers indicates that mange would prove to be a most serious disease in minks, if it should gain headway in a minkery, and one with which it would be very difficult to contend. In view of the fact that it is a serious and contagious disease, the owner should promptly call a competent veterinarian whenever any of his minks show a scabby condition of the skin, particularly if associated with signs of itchiness, such as scratching and gnawing at the affected areas. The diagnosis, treatment, and control of mange should be undertaken only under the direct supervision of a veterinarian.

#### INTERNAL PARASITES

*Coccidia*

##### Coccidia

Ranch-raised as well as wild minks, are sometimes infested with the coccidium Isospora bigemina. This closely resembles the coccidia encountered in foxes, dogs, and cats and is of the same type. The egglike oocyst, which is passed in the feces, is characterized by the development of two sporoblasts on incubation.

Recent observations indicate that coccidiosis may prove very troublesome in minkeries and be responsible for heavy losses in kits. The relative pathogenicity of coccidia in minks is a problem in need of investigation. Preliminary observations indicate that they are more injurious in these animals than in foxes and dogs.

Usually the first apparent symptom of coccidiosis in minks is the passage of mucus in the droppings, frequently of a greenish color. Streaks of blood also are common in the droppings. The appetite may become irregular, and in heavy infestations emaciation develops. Eventually the affected animal becomes weak and finally dies of either exhaustion or secondary infection. Shortly before death there may be a discharge from the eyes and convulsions may be observed.

No safe and effective medicinal treatment for the elimination of coccidia from minks has yet been found. Some investigators report that the use of a diet high in milk, especially milk powder, has been attended with favorable results in developing a resistance against coccidiosis in poultry. Whether such a diet would prove beneficial in the treatment of minks is not yet known.

An effective method of preventing coccidiosis is to keep the animals on suitable types of elevated wire floors, where they will be out of contact with the ground and with old droppings containing infective oocysts. The use of raised floors is also advisable in the treatment of infested minks, because this will tend to prevent renewed and increased infestation, thereby improving the chances of recovery.

#### Ascarids

R. G. Law, director of the Ontario Government Experimental Fur Farm (see references at end, 3), has reported finding minks in Canada troubled with ascarids. The report states that in affected animals diarrhea and intestinal disturbances are often present and that the pelt may be harsh and dry. Present indications are that on ranches in the United States ascarids are rare as parasites of minks.

#### Intestinal Capillarids

A fine threadlike worm of a species of *Capillaria* is an occasional parasite of wild and ranch-raised minks in various parts of the United States. The life history is not known, but probably no intermediate host is required. Infestation apparently results from swallowing embryonated eggs.

The pathogenicity of this parasite and a satisfactory anthelmintic treatment are not known. Preventive measures include keeping minks on elevated wire floors, as well as prompt and safe disposal of the droppings.

#### Lungworms

An occasional parasite of wild-trapped minks on ranches is a lungworm of the genus *Oslerus*. On post-mortem examination infested animals show dark or grayish colored tumorlike nodules in the lung tissue. These may range up to 1/2 inch in diameter, and most of them are found close to the bronchi. Upon dissection the nodules are found to contain numerous small closely interwoven nematodes.

The eggs of this parasite hatch within the body of the female worm, so that motile larvae, instead of eggs, are encountered upon fecal examination. The life history of this parasite is not known.

Treatment appears unsatisfactory because of the location of the infestation. Prevention consists of the isolation of infested animals and prompt and safe disposal of droppings.

#### Sinus Worms

*Filaroides mistelarii* is a blood-red roundworm commonly found infesting frontal sinuses of wild minks in the northeastern United States. This parasite has been found prevalent also in ranch-raised minks on a few farms in northern New York.

Old heavy infestations are characterized by postorbital swellings of the skull. When the bone over the frontal sinuses is peeled away these worms

may easily be mistaken for blood vessels. Their life history is unknown, but possibly it involves an intermediate host.

No curative treatment has been determined. One preventive measure consists of prompt and safe disposal of the droppings.

#### Kidney Worms

Diectophyme renale, commonly called the giant kidney worm, is occasionally found to be a parasite of wild-caught minks. Specimens encountered in these animals usually are 1/8 to 1/4 inch in diameter and 4 to 12 inches long. Although this reddish-colored roundworm is usually located in the pelvis of the kidney, specimens are sometimes found in the peritoneal cavity. As a rule, only one kidney is affected, and in this there are seldom more than one or two worms present. Development of this parasite in the pelvis of the kidney frequently causes complete destruction of the parenchymatous tissue by pressure atrophy, the result being that the kidney becomes a mere double-walled sac inclosing the worm. In such cases the kidney not affected usually shows compensatory enlargement (hypertrophy).

The life history of the giant kidney worm is not definitely known, but the findings of different investigators indicate that it requires certain kinds of fish as intermediate hosts.

There is no known curative treatment. Prevention apparently is a matter of proper cooking of fish suspected of coming from infested sources.

#### Trichinae

Trichiniasis, a serious and frequently fatal parasitic disease in man, apparently is occasionally found also in minks. In one instance the writer examined a mink carcass the musculature of which was speckled with small whitish spots barely visible to the naked eye. Microscopic examination indicated that they were cysts of trichinae. Unfortunately no feeding tests were performed to verify the identity of the parasite.

Trichinae are transmitted through the eating of raw meat infested with the encysted larvae. The larvae are most frequently found in the muscle tissues of rodents and swine. Prevention involves either thorough cooking of meat that may be trichinous or subjecting it to refrigeration for a period of not less than 20 days and at a temperature not higher than 5°F.

#### Spiny-headed Worms

Gnathostoma spinigerum is a small nematode that has been found in large numbers in the gastro-intestinal tract of wild minks. The life history is unknown, but it probably involves small invertebrate hosts, such as insects.

No satisfactory anthelmintic treatment of minks infested with this parasite has been determined. Preventive measures call for prompt disposal of droppings, preferably by burning.



## Tapeworms

Tapeworms of several kinds occur in minks. Since fish and various small mammals may serve as the intermediate hosts, care should be exercised to examine the minks' meat supply for tapeworm cysts.

Meat and fish showing small bladderlike cysts should be well cooked. No critical tests have yet been made to develop safe and effective anthelmintic treatments for the elimination of tapeworms from minks.

## Lung Flukes

A species of lung flukes, Paragonimus kellicotti, is encountered rather commonly in wild minks of the Middle West. Wallace (see references at end, 4) reports an incidence of the parasite in 7 of 84 carcasses of minks that died on ranches during the winter of 1929-30. On examination of 150 random fecal samples by the direct smear method, 6.33 per cent showed the presence of eggs of this trematode. Most of the infested animals probably were trapped in the wild.

These flukes, ranging from 6 to 15 millimeters long and from 3 to 7 millimeters wide, occur in cystlike cavities in the lungs. Each of the cysts, which appear as relatively large bluish elevated areas on the lungs, may contain from one to ten of the parasites, in addition to a dark brown, slimy fluid. Besides producing the cysts, these trematodes may cause marked inflammation and induration.

This lung fluke requires passage through two intermediate hosts, the first certain kinds of snails, and the second fresh-water crabs and crawfish. It has been found that cysts accidentally breaking off the second host have remained alive in water several weeks.

Because of their location, elimination of lung flukes by medicinal treatment appears unsatisfactory. Prevention comprises the provision of a safe supply of drinking water for minks, as well as avoidance of uncooked fresh-water crabs and crawfish in their food. To avoid stocking ranches with infested animals, breeders should have fecal examinations made of all minks obtained from the wild.

## Intestinal Flukes

The most common intestinal fluke of wild minks in the northern United States appears to be a species of Alaria. It is about 1/16 inch long. Minks heavily infested show diarrhea, weakness, and an unthrifty condition. The pelt may be poor, harsh, and dry. Rosma (see references at end, 1) reports that this trematode requires passage through three intermediate hosts before it is capable of developing to the adult stage in the primary host. Minks acquire this parasite in consuming the lungs and muscle tissues of infested tadpole- and frog-eating mammals.

No safe and effective treatment for the removal of this fluke from minks is known. To prevent infestation, the flesh and organs of mammals that eat

tadpoles or frogs should not be fed to minks. Fecal examination of new stock, particularly that from the wild, is advisable.

Another intestinal fluke encountered in minks in this country and in Canada is a species closely related to the trematode that causes salmon poisoning, a serious disease of dogs, foxes and coyotes of the northwestern Pacific States. It undoubtedly requires two intermediate hosts to complete its life history, the first probably a snail and the second a fish.

No critical tests have been made thus far for the treatment of minks for elimination of this parasite. Prevention involves proper care in feeding with fish. The fish should be well cooked or subjected to prolonged freezing. Donham et al. (see references at end, 2) found that freezing for five days or cooking destroyed the cysts of the salmon-poisoning fluke in trout and salmon.

#### Gall-bladder and Liver Flukes

A common and injurious fluke in both wild and ranch-raised minks in various parts of this country and Canada is Parametorchis canadensis. This small trematode infests not only the gall bladder but also the bile ducts deep in the liver tissue. The writer has examined lightly and moderately infested mink carcasses in which specimens of this parasite were present in the bile ducts even though none could be found in the gall bladder.

Some minkeries in this country and in Canada have suffered heavy losses from this trematode. It appears to be highly pathogenic. Among symptoms observed in liver-fluke infestation in minks are irregular appetite, unthrifty condition, weakness, jaundice, anemia, and convulsions. Sometimes the eyes are closed and purulent. In heavy and long-standing infestations, dropsy, due to obstructive biliary cirrhosis of the liver, is common.

The life history of this trematode has not been determined, but as with others it undoubtedly involves passage through two intermediate hosts, the first probably a snail and the second a fresh-water fish. Certain evidence indicates that suckers may be a second host.

No safe and effective curative treatment for liver-fluke infestation in minks has been determined. Cooking fresh-water fish is apparently in order as a preventive measure. It is advisable for mink breeders to have fecal examinations made of new animals before introducing them into their minkeries.

#### Maggots

According to reports some mink ranches in the Central West have had considerable trouble with maggots. It has been asserted that the maggots caused sores and abscesses of the skin in kits during the summer and that they have been responsible for a heavy mortality in kits on a few ranches.

Wallace (see references at end, 5) reports that the maggots are white in color and range from a quarter to a half inch in length. He states that in the particular fly involved (species not stated) the female deposits live larvae on young helpless minks. These maggots soon bore into the skin and proceed to grow, causing sores or abscesses having an opening to the outside. He also reports that several larvae are sometimes found in a single pocket. After feeding and growing to full size, which probably requires 4 or 5 days, the maggots drop off the mink, burrow into the ground, and form the pupae. In about ten days adult flies emerge from the pupae and are ready to attack minks. The pupae formed late in summer probably stay in the ground all winter and come out the following spring.

The ideal method of prevention would be to eliminate flies entirely or to keep them from gaining access to the minks. This, however, appears to be impossible on a practical basis. The breeder should utilize measures that will tend to keep flies down. The pens should be kept clean and disinfected at frequent intervals. All material that is likely to attract flies, such as droppings and food, should be picked up and safely disposed of, preferably by burning, as promptly as possible.

Whenever maggot infestation develops on a mink ranch, the young minks should be caught and inspected at regular and frequent intervals. The wound should be cleansed and a mild antiseptic applied. All maggots should be removed from the sores and promptly destroyed, either by crushing or by burning.

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1931. *Alaria mastelae* sp. nov., a trematode requiring four hosts. Science 74 (1925): 521-522, Nov. 20.

(2) Donham, C. R.; and Miller, F. W.

1926. So-called salmon poisoning in dogs (progress report). Jour. Amer. Vet. Med. Assoc. 68 (n. s. 21): pp. 701-712, illus.

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1930. The mink in captivity. Ontario Dept. Game and Fisheries, Bul. 3, 24 p., illus.

(4) Wallace, F. G.

1931. Lung flukes of the genus *Paragonimus* in American mink. Jour. Amer. Vet. Med. Assoc. 78 (n. s. 31): pp. 229-234, illus.

Ⓟ (5) -----

1931. Maggots or grubs in mink. Champion Ranch Bul. 4 (34): p. 3, Oct. Minneapolis, Minn.





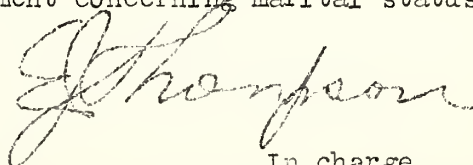
United States Department of Agriculture  
Bureau of Biological Survey  
Washington, D. C.

October 10, 1932.

MEMORANDUM TO FIELD LEADERS REGARDING THE EMPLOYMENT  
OF MARRIED PERSONS

In order that the Bureau may comply with instructions contained in P. B. A. Circular No. 214, dated October 3, 1932, copy attached, field leaders, at time of recommending an appointment to any position in the classified service, should furnish this office, with a statement regarding the marital status of any such person. This office must be advised as to whether the prospective employee is or is not married, and if so, whether the husband or wife is employed in the Government service or in the service of the District of Columbia. This information must be included in the recommendation for the appointment.

This requirement does not apply to appointments in the unclassified and excepted services, which include such positions as unskilled laborers and axemen, agents in cooperative work, and appointments to intermittent or part-time work the compensation for which is limited to \$540 per annum or less. However, when recommendation for appointment is made to the Bureau, if there is any doubt as to whether the position comes within the classified service, the statement concerning marital status should be furnished.

In charge,  
Division of Administration.

THE HISTORY OF THE  
CITY OF BOSTON  
FROM 1630 TO 1880

BY J. B. HARRIS

THE HISTORY OF THE  
CITY OF BOSTON  
FROM 1630 TO 1880

The history of the city of Boston from 1630 to 1880 is a story of growth and development. It begins with the arrival of the first settlers in 1630, who founded the city as a haven for Puritans seeking religious freedom. Over the years, Boston grew from a small village into a major center of commerce, industry, and culture. The city played a pivotal role in the American Revolution, serving as the headquarters of the Continental Congress and the site of many key events. In the 19th century, Boston became a leader in the abolitionist movement and the development of public education. The city's economy diversified, with a strong emphasis on manufacturing and trade. By 1880, Boston had established itself as one of the most important cities in the United States, known for its intellectual and cultural achievements.

UNITED STATES DEPARTMENT OF AGRICULTURE  
DIRECTOR OF PERSONNEL AND BUSINESS ADMINISTRATION  
WASHINGTON

October 3, 1932.

P. B. A. Circular No. 214.

EMPLOYMENT OF MARRIED PERSONS

Section 213 of the so-called Economy Act approved June 30, 1932, provides, in part, as follows:

"\* \* \* In the appointment of persons to the classified civil service, preference shall be given to persons other than married persons living with husband or wife, such husband or wife being in the service of the United States or the District of Columbia."

Until recently the Civil Service Commission has been requiring proof of marital status before appointments, reinstatements, transfers, promotions, or other changes of status of persons in the service were authorized. However, the duty of preliminary inquiry as to marital status has now been shifted to the Department, and the Civil Service Commission no longer requires affidavit as to marital status except in connection with reinstatements. Instead they are requiring that Civil Service Commission form 124, or 124-B Field, "Declaration of Appointee," which contains information regarding members of family in the service, shall be submitted in connection with every appointment; temporary, whether or not from the register, probational and permanent.

In order to avoid bringing eligibles from a distance to accept appointment, only to find that because they have husbands or wives in the service of the United States or the District of Columbia they can not assume duty, the bureaus and offices should advise prospective appointees of the requirements of Section 213. In other words, the marital status of prospective employees should be ascertained before final steps are taken toward their appointment, and all recommendations to the Secretary for appointments, both temporary and permanent, either in Washington or the field service to positions in the classified Civil Service must carry the definite statement that the appointee's husband or wife, as the case may be, is not in the service of the United States or the District of Columbia.

The inhibition against the appointment of persons with husbands or wives in the service when other persons are available does not apply to appointments in the unclassified or the excepted services.

  
Director.





United States Department of Agriculture  
Bureau of Biological Survey

October 17, 1932.

MEMORANDUM TO PROJECT LEADERS REGARDING GOVERNMENT-OWNED  
MOTOR-PROPELLED PASSENGER-CARRYING VEHICLES

Your attention is called to the accompanying communication of October 5, 1932, from the Secretary of Agriculture.

Attention of employees was called to the provisions of Public 269, approved July 7, 1932, in THE SURVEY for July; Department Circular No. 205, dated July 22, 1932, also quoting this law, was sent early in August to all field leaders having Government-owned passenger-carrying vehicles under their supervision. All employees of this Bureau operating such vehicles should therefore be fully informed of legislation restricting the use of Government-owned vehicles to official use and the necessity of compliance therewith.

In regard to the marking of Government-owned automobiles, the Property Section sends out at the time of purchase of each automobile a set of decalcomanias and cement for use in marking the automobile. It is assumed that all Bureau automobiles (passenger-carrying and trucks) have been marked to comply with Paragraph 724 of the Administrative Regulations. Field leaders are requested to make a careful check of all automobiles charged to them, and should there be any that are not so marked, such automobiles should be reported immediately to this office with request for decalcomanias and cement to be used in marking them.

W. C. Henderson  
Acting Chief.

(Over)

DEPARTMENT OF AGRICULTURE  
Washington

October 5, 1932.

CHIEFS OF BUREAUS AND OFFICES:

The attention of chiefs of bureaus and offices is directed to the following excerpt from a letter (A-27784) addressed to me by the Comptroller General of the United States under date of September 15, 1932:

"In connection with a survey of the accounting system and procedure of \* \* \* the Department \* \* \* it was noted that a number of Government-owned passenger-carrying automobiles were being used by employees of the Department for personal convenience. Among such are the automobiles assigned to \* \* \*.

The Act making appropriations for the Department of Agriculture for the fiscal year 1933, Public No. 269, approved July 7, 1932, provides:

"\* \* \* nor shall any money appropriated herein be used for maintaining, driving, or operating any Government-owned motor-propelled passenger-carrying vehicle not used exclusively for official purposes; and 'official purposes' shall not include the transportation of officers and employees between their domiciles and places of employment except in cases of officers and employees engaged in field work the character of whose duties makes such transportation necessary and then only when the same is approved by the head of the Department. \* \* \*"

It was noted also that very few of the Government-owned passenger-carrying automobiles in use by the Department are marked with the seal of the Department or otherwise to facilitate their ready identification as Government-owned machines. In this connection your attention is invited to Memorandum No. 553, dated July 1, 1926, of the Secretary of Agriculture providing therefor."

The provision of law prohibiting personal use of official automobiles was brought to the attention of each bureau of the Department in Circular No. 205, issued by the Office of Personnel and Business Administration on July 22, 1932. The requirement for standard marking of automobiles to show their ownership by the United States has been a part of the formal Administrative Regulations of the Department since July 1, 1926, when Secretary's Memorandum No. 553, cited by the Comptroller, was issued.

Both the prohibition as to personal use and the requirement for standard marking of vehicles are scrupulously observed by the members of the Department generally. It is not my intention that non-observance of these obvious and well understood requirements by a few of the personnel shall be allowed to become a source of criticism that will reflect upon the staff of our Department as a whole. Chiefs of bureaus and offices are directed, therefore, to take such steps as may be necessary to bring these matters to the attention of the personnel of their bureaus. It should be definitely understood at this time by all concerned that the Department requires full compliance with the requirements of the law and of its own regulations.

*Arthur C. Hyde*  
Secretary.